WO 8001701
AUG 1980

PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 3: E03F 5/04 — A1

(11) International Publication Number: WO 80/01701

(43) International Publication Date: 21 August 1980 (21.08.80)

(21) International Application Number: PCT/SE80/00038

(22) International Filing Date: 7 February 1980 (07.02.80)

(31) Priority Application Number: 79011158-1

(32) Priority Date: 9 February 1979 (09.02.79)

(33) Priority Country: SE

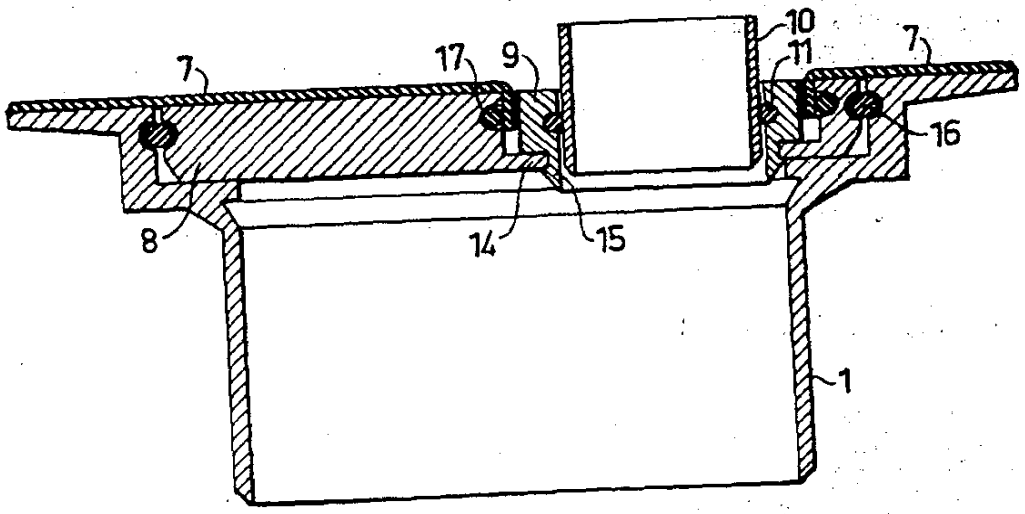
(71) Applicant; and
(72) Inventor: SÖDERSTRÖM, Gert, Wilhelm [SE/SE]; 62 Hammarbyvägen, S-194 00 Upplands Väsby (SE).

(74) Agents: AB STOCKHOLMS PATENTBYRÅ, ZACCO & BRUHN et al.; Box 3129, S-103 62 Stockholm (SE).

(81) Designated States: AT (European patent), CH (European patent), DE (European patent), DK, FR (European patent), GB (European patent), JP, NL (European patent), NO, SE (European patent), US

Published
With international search report

(54) Title: FLOOR CONNECTION FOR SEWER



(57) Abstract

A connection for connecting sewers to floors for different discharge units, which connection comprises a floor member (1) located in the floor and a clamping ring (2, 9) for clamping a floor covering (7) sealingly in a recess in the floor member or in an intermediate piece (9) complementary to the floor member for reducing the connection dimension, which clamping ring (2, 9) clamps the floor covering (7) in a gap adjusted to the floor covering between the clamping ring (2, 9) and the intermediate piece (9) or the floor member (1), which clamping ring (2, 9) is held in the floor member (1) or in the intermediate piece (8) by snapping means (4, 5, 14, 15), and the floor covering is sealed against the floor member or intermediate piece by an O-ring.

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT	Austria	LI	Liechtenstein
AU	Australia	LU	Luxembourg
BR	Brazil	MC	Monaco
CF	Central African Republic	MG	Madagascar
CG	Congo	MW	Malawi
CH	Switzerland	NL	Netherlands
CM	Cameroon	NO	Norway
DE	Germany, Federal Republic of	RO	Romania
DK	Denmark	SE	Sweden
FR	France	SN	Senegal
GA	Gabon	SU	Soviet Union
GB	United Kingdom	TD	Chad
HU	Hungary	TG	Togo
JP	Japan	US	United States of America
KP	Democratic People's Republic of Korea		

Floor connection for sewer

This invention relates to a floor connection for sewers for connecting different discharge units, for example water closet, wach-basin, draining gutter, etc. The invention particularly relates to a sewer connection in such cases when rooms are concerned in which plastic floors are laid, as is generally the case in toilets, washrooms and the like.

Heretofore, these connections for different discharge units have been made by means of different connections adapted for the different connection units. Moreover, sealing against the floor covering, which generally consists of plastic, either has been non-existent or consisted of a hole of suitable size cut in the floor-covering. This conventional method involves great difficulties when a room shall be re-arranged in one way or another and, therefore, discharge units other than those originally intended for the room are to be connected. The connections also are relatively insanitary due to their tendency of collecting dust and moisture in the connection to the floor. Consequently, it was practically not possible, for example, to wash toilet rooms, because the water penetrates into the joints and moves on in an undesirable manner.

The present invention has the object to eliminate the aforesaid drawbacks and to provide a system for connecting discharge units to sewers, which system comprises a smaller number of components than the known technique and which, besides, yields good sealing against the floor covering and eliminates dust- and moisture-collecting crevices and which, above all, prevents the propagation of moisture. This object is achieved according to the present invention, in that the sewer connection unit consists of a lower or outer member, which at the lower end can be connected to a standard sewer while an upper or

inner member is adapted for insertion into the lower member. The inner member is adapted at its lower end to constitute a connection for the discharge unit in question, which connection alternatively can be effected by means of an insert for the inner member when a reduction in dimension is required. The floor covering is clamped at its mounting either between the outer member and the inner member or between the latter member and an insert therefor. Sealing is brought about by an O-ring, which at the clamping operation is positioned between the floor covering and the outer one of the members fixing the same in a groove made for this purpose in the outer one of the members. The different members comprised can be arranged so as to substantially form at their mounting a common plane, which aligns with the floor plane, and the O-ring in the same groove can serve for mutual sealing when no floor covering is to be clamped. For fixing the inner member in the lower connection member, the latter one is provided on its inside with a hook-shaped projection, about which a corresponding tooth-shaped projection from the upper or inner member can engage. A possible insert is fixed in the same way in the inner member. It cannot be regarded sufficient to only clamp the floor covering without and O-ring between the members, because the floor covering generally is heated at its mounting in order to cause it to shrink and upon its cooling gives rise to a leakage gap, when no O-ring is provided.

It is possible by means of the invention to use the same dimension of the sewer for all desired connections, and the adjustment is made in the connection unit proper. When a connection is to be exchanged against another one, a suitable tool is inserted and the inner member or members are broken away without causing damage on the fixed outer or lower member, whereafter a suitable inner connecting member can be inserted.

The invention is described in greater detail in the following, with reference to the accompanying drawings,

in which Fig. 1 shows two arches including one sewer system according to the present invention and, respectively, one sewer system according to conventional technique, Fig. 2 is a cross-section showing in greater detail how a connection according to the invention looks when a maximum connection dimension is utilized, Fig. 3 shows the utilization of the invention when a discharge unit with a smaller outgoing dimension, for example a wash--basin, is connected, and Fig. 4 shows a suitable water seal design.

In Fig. 1 two arches, an upper one and a lower one are shown, into the upper one of which a sewer system of such a kind has been cast that it can be built up on the basis of the invention subject matter, and of which all connections at this stage have an identical appearance. In the lower arch, however, a system of conventional type is shown which, as can be seen, results in a much greater number of different members and in greater difficulty of making sealings and connections to the floor covering. For establishing the water seal function corresponding to the water seal shown in the lower arch, for example the one shown in Fig. 4 can be used.

In Fig. 2 is shown how, for example, a water-closet can be connected to the sewer system. The connection according to the invention comprises a lower member 1, which is cast-in in the arch and in its turn connected to the sewer system. The upper surface of the lower member 1 is cast-in aligned with the cast floor. In the upper end of the lower connection member an inward facing recess extending all about is made for receiving a clamping ring 2. Said ring is provided at its lower end with a hook-like flange 5 projecting in lateral direction and intended to engage beneath a flange-like radially inward projection 4 on the lower member 1. When the clamping ring well has been pushed down into the lower member 1 of the connection, which lower member hereinafter is called floor member, the ring cannot move upward out of the

lower member.

When the clamping ring 2 is being pushed down into the floor member, the floor covering 7 is clamped between said two parts. Into the floor covering a hole had been cut previously which is slightly smaller than the recess in the floor member and, respectively, the outer dimension for the clamping ring 2. The edge of the hole was thereafter heated in order to render the covering plastic before it is pressed down by the clamping ring. Between the floor member 1 and the flanged-down covering an O-ring 16 is provided in a groove in the floor member 1 for effecting sealing even after the covering has been cooled and thereby shrunk.

Into the clamping ring 2, into which an O-ring 16 has been laid in an internal groove therein, a connecting piece 3 from the water-closet can be inserted. When desired, for obtaining a smooth easy to clean transition from the floor to the connecting piece of the water-closet, the clamping ring 2 can be formed in the way as indicated by dash-dotted line in Fig. 2.

In Fig. 3 is shown how the connection according to the invention has been provided with an intermediate piece 8, which is held in place in the floor member 1 by means of an O-ring 16, which snappingly engages with grooves facing toward each other in the intermediate piece 8 and, respectively, the floor member 1. In said intermediate piece 8 a recess for a sewer connection is provided which is identical with the one shown in Fig. 2, except for the diameter which for this connection is smaller. The clamping ring here is designated by 9, the locking flanges are designated by 14 and 15, and the sealing O-ring is designated by 17. To the clamping ring 9 a connecting conduit 10, for example to a wash-basin, can then be connected by using an O-ring 11 in conventional manner. In the same way as in Fig. 2 the clamping ring 2 clamps the floor covering 7, but in this case against the recess wall of the intermediate piece 8.

It is, of course, imaginable within the scope of the invention to provide additional intermediate pieces, if necessary. It should also be observed that the arrangement as shown in Fig. 3 permits a certain adjustment of the position for the conduit 10, due to the eccentric position of the connection in the intermediate piece, whereby the installation work can be facilitated still more.

It is not necessary, either, to clamp the floor covering with the clamping ring as shown in Fig. 3, but the covering can be laid in between the intermediate piece and the floor, which implies the advantage that the floor covering with associated sealing is not affected by an exchange of connection.

Fig. 4 shows how a water seal suitably can be designed so as together with the afore-described details form a sink in the floor. The water seal includes a clamping ring 21, which internally transforms to a downward directed funnel 22, on which a lower water seal portion 24 is attached via radial flanges 23 by means of threads. The floor covering 7 has been clamped in the same manner as in the above examples. The floor member 1 further is connected to a bend 5 of conventional kind with a sealing by means of an O-ring 26, which connection was made prior to the casting-in operation.

PATENT CLAIMS

1. A floor connection for sewers, comprising a floor member (1) for being cast in or jointed in the floor and for connection to a sewer system, which floor member includes an upward and inward facing recess, into which a clamping ring (2, 21, 9) can be inserted while simultaneously clamping a floor covering (7) between the clamping ring and the inner wall of the floor member (1) in the recess, c h a r a c t e r i z e d in that the floor member at its upper end is intended to be substantially on the same level as the floor, and that the clamping ring is held in the recess by snapping means in a groove in the peripheral wall of the recess, into which an O-ring (16) can be laid for sealing between the floor covering and the floor member.

2. A connection as defined in claim 1, c h a r a c t e r i z e d in that the floor member (1) comprises an intermediate piece (8), which is locked in the floor member (1) by means of corresponding grooves in the recess thereof and in the intermediate piece and by means of an O-ring (16) in said groove, and that a hole with recess for a smaller clamping ring (9) is provided in said intermediate piece so that a floor covering can be clamped between the clamping ring (9) and the intermediate piece (8).

3. A connection as defined in any one of the preceding claims, c h a r a c t e r i z e d in that the snapping means consist of an inward facing circular flange (4, 14) in the floor member (1), about which flange a hook-like projection (5, 15) in the clamping ring (9, 2) and extending all about the same can engage.

4. A connection as defined in any one of the preceding claims, c h a r a c t e r i z e d in that the clamping ring (2) internally can receive a pipe (3) with an O-ring (6) laid-in in a groove for this purpose in the clamping ring (2).

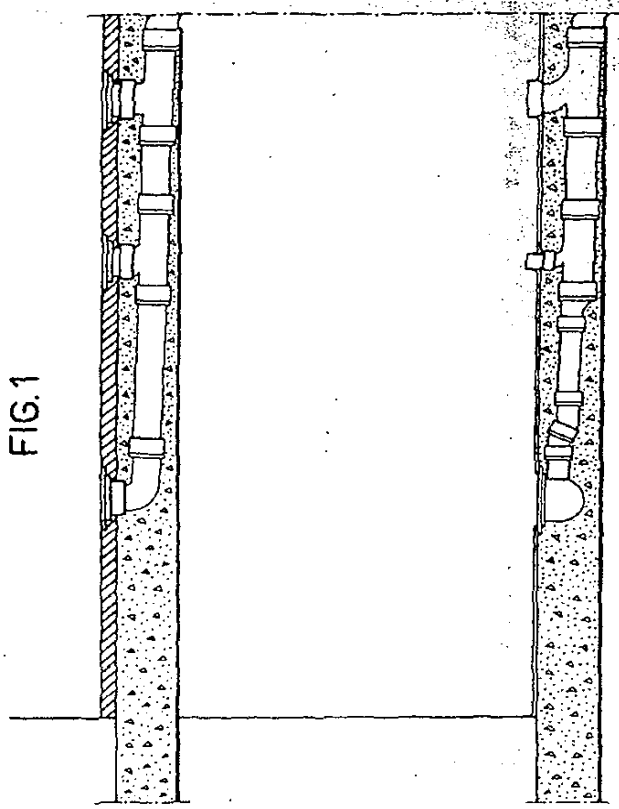


FIG.1

FIG. 2

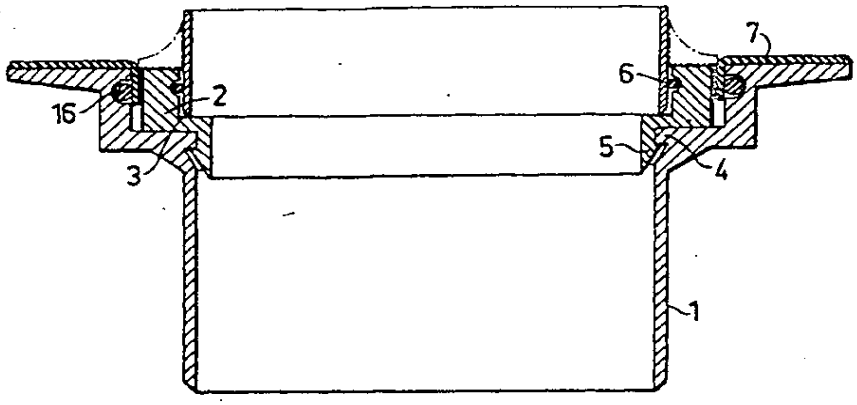


FIG. 3

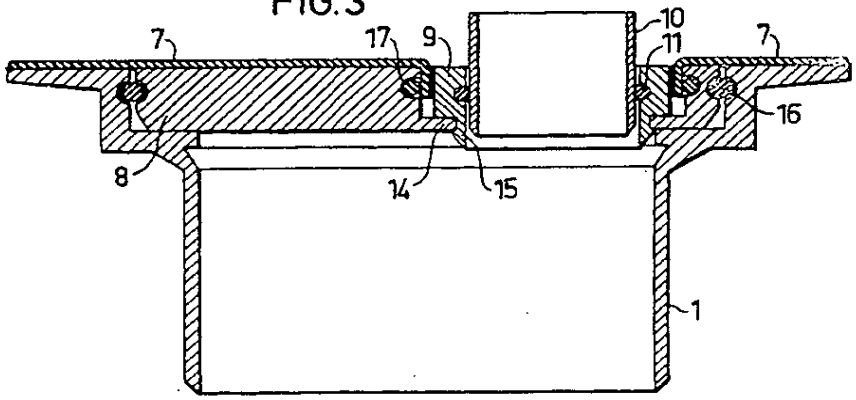
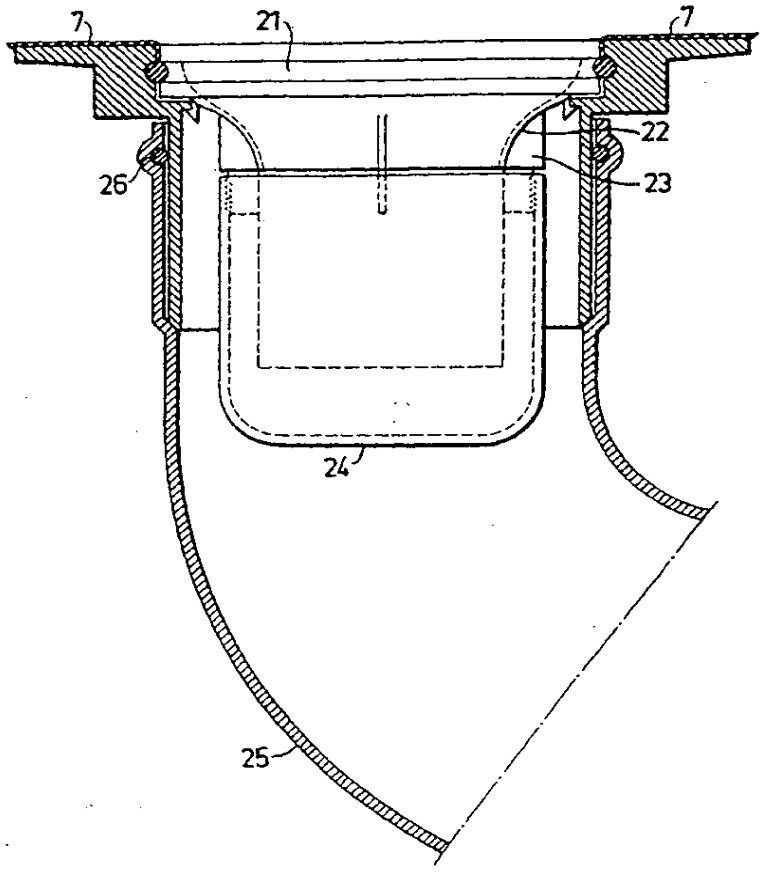


FIG. 4



INTERNATIONAL SEARCH REPORT

International Application No PCT/SE80/00038

I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) [3]

According to International Patent Classification (IPC) or to both National Classification and IPC [3]

E 03 F 5/04

II. FIELDS SEARCHED

Minimum Documentation Searched [4]	
Classification System	Classification Symbols
IPC 3 US Cl	E 03 F 5/00-5/12 210:163-167; 404:25-26

Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched [5]

SE, NO, DK, FI classes as above

III. DOCUMENTS CONSIDERED TO BE RELEVANT [14]

Category *	Citation of Document, [16] with indication, where appropriate, of the relevant passages [17]	Relevant to Claim No. [18]
A	SE, C, 214 760 published 1966, December 19, AB M Lundgrens Gjuteri	
A	SE, B, 306 062 published 1968, November 11, T A S Arvidson	1
A	SE, B, 362 917 published 1973, December 27, Klaus Esser KG	1, 4

* Special categories of cited documents: [15]

"A" document defining the general state of the art

"E" earlier document but published on or after the international filing date

"L" document cited for special reason other than those referred to in the other categories

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but on or after the priority date claimed

"T" later document published on or after the international filing date or priority date and not in conflict with the application, but cited to understand the principle or theory underlying the invention

"X" document of particular relevance

IV. CERTIFICATION

Date of the Actual Completion of the International Search [1]	Date of Mailing of this International Search Report [2]
1980-05-08	1980 -05- 15
International Searching Authority [1]	**Signature of Authorized Officer [20]**
Swedish Patent Office	Åke Olofsson

Form PCT/ISA/210 (second sheet) (October 1977)